

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OKLAHOMA

3 PREVUE INTERACTIVE, INC., a Delaware)
4 corporation,)

5 and)

6 UNITED VIDEO SATELLITE GROUP, INC.,)
7 a Delaware corporation,)

8 Plaintiffs,)

9 V.) No. 93-C-934-H

10 STARSIGHT TELECAST, Inc., a)
11 California corporation,)

12 Defendant.)

13 STARSIGHT TELECAST, Inc., a)
14 California corporation,)

15 Counterclaimant,)

16 V.)

17 UNITED VIDEO SATELLITE GROUP, INC.,)
18 a Delaware corporation,)

19 PREVUE INTERACTIVE, INC., a Delaware)
20 corporation,)

21 and)

22 PREVUE NETWORKS, INC., a Delaware)
23 corporation,)

24 Counterdefendants.)

25 REPORTER'S TRANSCRIPT OF PROCEEDINGS
 HAD ON MAY 15, 1996
 NONJURY TRIAL - VOLUME V

 BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

 Glen R. Dorrough
 UNITED STATES COURT REPORTER

1 APPEARANCES:

2 For the Plaintiffs Mr. John E. Dowdell
 and Counterdefendants: Norman & Wohlgemuth
 3 2900 Mid-Continent Tower
 Tulsa, Oklahoma 74103

4 Mr. Robert C. Morgan
 5 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
 6 Ms. Elaine A. Drager
 Fish & Neave
 7 1251 Avenue of the Americas
 New York, New York 10020-1104

8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 Orbison & Lewis
 10 Frisco Building
 502 West Sixth Street
 11 Tulsa, Oklahoma 74119-1010

12 Mr. A. James Isbester
 Mr. William L. Anthony
 13 Ms. Susan M. Spaeth
 Mr. K. T. Sunny Cherian
 14 Townsend and Townsend and Crew
 Steuart Street Tower
 15 One Market Plaza
 San Francisco, California 94105-1492

16 Mr. William L. Anthony, Jr.
 17 Brobeck, Phleger & Harrison
 Two Embarcadero Place
 18 2200 Geng Road
 Palo Alto, California 94303-0913

19 Mr. John W. Girvin, Jr.
 20 Cooley, Godward, Castro,
 Huddleston & Tatum
 21 Five Palo Alto Square
 4th Floor
 22 Palo Alto, California 94306-2155

23 - - - - -

24

25

1 Go ahead, Mr. Rogers. Thank you.

2 Q. (By Mr. Rogers) Dr. Ligler, with respect to the level of
3 ordinary skill in the art, you testified your opinion is based
4 upon obviousness and view to a person of ordinary skill in the
5 art. In your opinion what was the level of ordinary skill in
6 the art of electronic computer program guides and computer
7 systems in 1985? Who was a person, in your opinion, of
8 ordinary skill in the art?

9 A. A person of ordinary skill in the art in that time frame
10 would be a skilled individual in the computer arts and in
11 television and/or cable systems, cable television systems.
12 This individual might be degreed, might have extended
13 experience after a high school education, perhaps a high school
14 education plus a few years of college, but they would be
15 skilled.

16 Q. And what's the basis of your holding this opinion? What
17 are you looking to that forms your opinion?

18 A. Well, I reviewed the -- I heard the testimony of Mr.
19 Kerklo. I certainly have had an opportunity to assess Messrs.
20 Clupper and Axford, and I think we've heard a good bit about
21 Mr. Young's qualifications as well.

22 Q. All right. Let's talk about invalidity now in light of
23 your opinion of obviousness. I would like to focus first on
24 claim 66, and I believe you have an exhibit, that's Exhibit
25 536.

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OKLAHOMA

3 PREVUE INTERACTIVE, INC., a Delaware)
4 corporation,)

5 and)

6 UNITED VIDEO SATELLITE GROUP, INC.,)
7 a Delaware corporation,)

8 Plaintiffs,)

9 V.)

No. 93-C-934-H

10 STARSIGHT TELECAST, Inc., a)
11 California corporation,)

12 Defendant.)

13 STARSIGHT TELECAST, Inc., a)
14 California corporation,)

15 Counterclaimant,)

16 V.)

17 UNITED VIDEO SATELLITE GROUP, INC.,)
18 a Delaware corporation,)

19 PREVUE INTERACTIVE, INC., a Delaware)
20 corporation,)

21 and)

22 PREVUE NETWORKS, INC., a Delaware)
23 corporation,)

24 Counterdefendants.)

25 REPORTER'S TRANSCRIPT OF PROCEEDINGS
 HAD ON MAY 8, 1996
 NONJURY TRIAL - VOLUME I

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

1 APPEARANCES:

2 For the Plaintiffs Mr. John E. Dowdell
 3 and Counterdefendants: Norman & Wohlgemuth
 2900 Mid-Continent Tower
 4 Tulsa, Oklahoma 74103

Mr. Robert C. Morgan
 5 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
 6 Ms. Elaine A. Drager
 Fish & Neave
 7 1251 Avenue of the Americas
 New York, New York 10020-1104

8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 Orbison & Lewis
 10 Frisco Building
 502 West Sixth Street
 11 Tulsa, Oklahoma 74119-1010

12 Mr. A. James Isbester
 Mr. William L. Anthony
 13 Ms. Susan M. Spaeth
 Townsend and Townsend and Crew
 14 Steuart Street Tower
 One Market Plaza
 15 San Francisco, California 94105-1492

16 Mr. William L. Anthony, Jr.
 Brobeck, Phleger & Harrison
 17 Two Embarcadero Place
 2200 Geng Road
 18 Palo Alto, California 94303-0913

19 Mr. John W. Girvin, Jr.
 Cooley, Godward, Castro,
 20 Huddleson & Tatum
 Five Palo Alto Square
 21 4th Floor
 Palo Alto, California 94306-2155

22 - - - - -

23

24

25

1 MR. ROGERS: Your Honor, Larry Rogers. Plaintiffs
2 call Mr. Charles Clupper to the stand.

3 Your Honor, we have a book of exhibits that we expect
4 to be using with this witness. May I have my associate
5 approach the bench and the witness to deliver that book?

6 THE COURT: All right. I say so with trepidation.

7 CHARLES CLUPPER

8 Called as a witness on behalf of the plaintiffs, being first
9 duly sworn, testified as follows:..

10 DIRECT EXAMINATION

11 BY MR. ROGERS:

12 Q. Good morning.

13 A. Good morning.

14 Q. Would you please state your name for the record?

15 A. Charles Clupper.

16 Q. And what is your current residence address?

17 A. Current residence is El Dorado Hills, California.

18 Q. And by whom are you presently employed?

19 A. International Billing Services.

20 Q. Are they a subsidiary of any company or a division?

21 A. Yes, we are a wholly-owned subsidiary of U.S. Computer
22 Services.

23 Q. And your present employment is also in California?

24 A. Correct.

25 Q. And what is your present title at International Billing

1 Services?

2 A. Vice President of Engineering Systems.

3 Q. And your responsibilities in that capacity?

4 A. My responsibilities include overseeing maintenance,
5 facilities design and various other engineering types of design
6 at that company.

7 Q. How long have you been with International Billing Services
8 or another arm of U.S. Computer Services?

9 A. Almost 18 years.

10 Q. And what is the nature of -- give the Court a brief
11 overview of the nature of the business of your organization.

12 A. The nature of the business of International Billing
13 Services or U.S. Computer Services?

14 Q. Why don't we start at the top with U.S. Computer Services?

15 A. U.S. Computer Services is in the -- on the CableData
16 side, which is also a wholly-owned subsidiary, it provides
17 services and software to the cable television and telephony
18 industries, and the International Billing Services subsidiary
19 is in the business of providing statements a lot of which are
20 billing statements to cable television, telecommunications,
21 financial and other industries.

22 Q. Would you please relate briefly for the Court what your
23 positions and experiences have been with U.S. Computer
24 Services, an affiliated division, over the 17 years you have
25 been with the company eye-level?

1 A. Sure. I was, first, engineer with the company in 1978,
2 and from there moved to positions in various engineering
3 disciplines and then into engineering management with U.S.
4 Computer Services which did business as CableData at that time.

5 Q. What time period are you talking about now?

6 A. That time period starts in 1978 and continues until 1990
7 when I moved to International Billing Service.

8 Q. You were involved in engineering activities in connection
9 with the design of products in the early days?

10 A. Yes, I was.

11 Q. Are you appearing here today voluntarily?

12 A. Yes, I am.

13 Q. At whose request?

14 A. I was subpoenaed for the --

15 Q. For the deposition?

16 A. Yes, I was.

17 Q. You are appearing here today voluntarily at the request of
18 the plaintiffs in this case?

19 A. Yes, I am.

20 Q. Beyond having your direct expenses being paid for, are you
21 in any way being compensated in the nature of a consulting fee
22 or otherwise for your appearance here today?

23 A. No, I am not.

24 Q. Do you or to your knowledge do you know that U.S. Computer
25 Services or any company division of that organization has any

1 financial or other interest whatsoever in the outcome of this
2 litigation?

3 A. Not to the best of my knowledge, no.

4 Q. Do you own any stock in any of the parties to this
5 litigation?

6 A. No, I do not.

7 Q. Is U.S. Computer Services affiliated in a corporate sense
8 in any way with the parties to this litigation?

9 A. No, I'm not, or they are not.

10 Q. And is U.S. Computer Services involved in any way with
11 providing services or goods to any of the parties to this
12 litigation to your knowledge?

13 A. Not to the best of my knowledge, no.

14 Q. Is U.S. Computer Services or any part of that organization
15 involved in providing television schedule data or interactive
16 television program guide services?

17 A. No.

18 Q. All right. Would you please describe your educational
19 background since high school?

20 A. Yes. I studied engineering, had a couple of years of
21 engineering classes and then went into the industry and never
22 completed my degree.

23 Q. Did you attend any college?

24 A. Several along the way, yes.

25 Q. Okay. And what did you study in college?

1 A. Electrical engineering and some mechanical engineering
2 also.

3 Q. And did you join the military at some point?

4 A. Yes.

5 Q. And when was that?

6 A. I joined the Air Force in 1966.

7 Q. And in connection with that did you work in electronics?

8 A. Yes, I did.

9 Q. Would you please describe for the Court the nature of your
10 electronics hands-on education as it were and work experience
11 starting from your time in the military on up through when you
12 joined U.S. Computer Services?

13 A. Yes. The experience in the military, education in the
14 military, was general electronics background including radar
15 and photo-imaging and computer systems. Then I was -- when I
16 was stationed in Germany I actually worked on mapping radars
17 and other types of computer systems and electronically-
18 controlled photo-mapping devices.

19 Q. Were you involved in the design of electronic componentry,
20 the circuits themselves, transistors and things of that nature?

21 A. Not in the military, no.

22 Q. Okay. After the military, I presume that ended at some
23 point in time --

24 A. Yes.

25 Q. -- and you entered industry. Could you describe for the

1 Court where you began, and continue on up to the time you
2 joined U.S. Computer Services?

3 A. Surely. I started working for a company called Voice of
4 Music, which is now defunct. There I was an engineering
5 technician responsible for designing circuits and that type of
6 thing for the stereo component industry.

7 Q. And what year was that if you recall?

8 A. That was 1970.

9 Q. Okay. Then what?

10 A. After Voice of Music I went to work for Honeywell
11 Information Systems who provided equipment and services mainly
12 in the mainframe computer area, and I worked for them until
13 1978 under several capacities, some of them being in
14 maintenance, some of those being in management, and I also did
15 some design for them.

16 Q. And then in '78 you joined U.S. Computer Services;
17 correct?

18 A. That's correct.

19 Q. You continued working in an engineering capacity there?

20 A. Correct.

21 Q. Do you have any patents issued in your name?

22 A. Yes, I do.

23 Q. How many?

24 A. Four.

25 Q. In front of you in the exhibit book if you will turn,

1 please, to Exhibits 285 and 286 there are a couple of patents
2 there. I would like you to identify those as being yours if in
3 fact they are?

4 A. The one marked Exhibit 285 is mine, and the one marked
5 Exhibit 286 is also mine.

6 Q. All right. Certainly without going into these, generally
7 what do these relate to?

8 A. They both relate to either a descrambling apparatus that
9 was designed for the cable television set-top converter market
10 and a data transmission method designed for the same market.

11 Q. Did these patents have anything to do with the system that
12 I've been calling a CableData system, which was a system in the
13 nature of an interactive addressable cable television set-top
14 box?

15 A. Yes, they did.

16 Q. Could you please describe for the Court what role you
17 played in connection with that system, CableData system, that
18 these patents relate to?

19 A. My role was to architect the hardware system that was
20 present in the home, in other words the set-top converter, and
21 also what's typically called the headend computer that actually
22 transmitted the data to that set-top converter.

23 Q. The CableData system was something that was developed by
24 U.S. Computing Services?

25 A. Yes, it was.

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OKLAHOMA

3 PREVUE INTERACTIVE, INC., a Delaware)
4 corporation,)

5 and)

6 UNITED VIDEO SATELLITE GROUP, INC.,)
7 a Delaware corporation,)

8 Plaintiffs,)

9 V.) No. 93-C-934-H

10 STARSIGHT TELECAST, Inc., a)
11 California corporation,)

12 Defendant.)

13 STARSIGHT TELECAST, Inc., a)
14 California corporation,)

15 Counterclaimant,)

16 V.)

17 UNITED VIDEO SATELLITE GROUP, INC.,)
18 a Delaware corporation,)

19 PREVUE INTERACTIVE, INC., a Delaware)
20 corporation,)

21 and)

22 PREVUE NETWORKS, INC., a Delaware)
23 corporation,)

24 Counterdefendants.)

25 REPORTER'S TRANSCRIPT OF PROCEEDINGS
 HAD ON MAY 9, 1996
 NONJURY TRIAL - VOLUME II

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

1 APPEARANCES:

2 For the Plaintiffs Mr. John E. Dowdell
 and Counterdefendants: Norman & Wohlgemuth
 3 2900 Mid-Continent Tower
 Tulsa, Oklahoma 74103

4 Mr. Robert C. Morgan
 5 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
 6 Ms. Elaine A. Drager
 Fish & Neave
 7 1251 Avenue of the Americas
 New York, New York 10020-1104

8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 Orbison & Lewis
 10 Frisco Building
 502 West Sixth Street
 11 Tulsa, Oklahoma 74119-1010

12 Mr. A. James Isbester
 Mr. William L. Anthony
 13 Ms. Susan M. Spaeth
 Mr. K. T. "Sunny" Cherian
 14 Townsend and Townsend and Crew
 Steuart Street Tower
 15 One Market Plaza
 San Francisco, California 94105-1492

16 Mr. William L. Anthony, Jr.
 17 Brobeck, Phleger & Harrison
 Two Embarcadero Place
 18 2200 Geng Road
 Palo Alto, California 94303-0913

19 Mr. John W. Girvin, Jr.
 20 Cooley, Godward, Castro,
 Huddleston & Tatum
 21 Five Palo Alto Square
 4th Floor
 22 Palo Alto, California 94306-2155

23 - - - - -

24

25

1 little bit more time next week, but I do prefer to move them in
2 all together. One additional point is simply that I find that
3 counsel for the other side is always more cooperative when they
4 still have exhibits of their own to be moved in. It's a
5 practice that has served well, so I don't see any reason to
6 change it now.

7 All right and this is the 583?

8 MR. ROGERS: Right. That is the small copy of the
9 large chart of the complicated circuit diagram.

10 THE COURT: All right.

11 MR. ROGERS: And then lastly, may Mr. Clupper be
12 excused from attendance at the trial at this point?

13 THE COURT: Any objection, Mr. Anthony?

14 MR. ANTHONY: No objection, Your Honor.

15 THE COURT: All right. He may be excused.

16 MR. ROGERS: Thank you, Your Honor. May I proceed?

17 THE COURT: Yes. Go ahead.

18 Q. (By Mr. Rogers) Good morning, Mr. Axford. Would you
19 state your full name for the record, please?

20 A. Michael Floyd Axford.

21 Q. And your current residence address and your current
22 employment, please?

23 A. It's Rancho Cordova. I work for CableData.

24 Q. What is the relationship between CableData and the company
25 for whom Mr. Clupper works, International Billing Services?

1 A. Both companies are wholly-owned subsidiaries of U.S.
2 Computer Services.

3 Q. And your current title at CableData?

4 A. Manager, system architecture.

5 Q. Is Mr. Clupper your supervisor today in any respect?

6 A. In no way.

7 Q. What are your current responsibilities at CableData?

8 A. My responsibilities are to investigate new technologies
9 and determine how to apply them to the products that we're
10 building, and to infuse those technologies into the teams that
11 are building the products.

12 Q. And what sort of products are we talking about, what sort
13 of technologies?

14 A. They're primarily software products for subscriber
15 management and billing within the cable and telephone
16 industries.

17 Q. Would you please describe for the Court your educational
18 and professional background?

19 A. I have a high school education, very much self-driven,
20 self-learner, and as far as professional experience, my first
21 real technical position was with the Watch Tower Society doing
22 maintenance on elevators and other bindery equipment and
23 finally doing computer maintenance for them and designed small
24 circuits.

25 Q. What years was that?

1 A. That was in '77 to '81.

2 Q. Okay.

3 A. And then from there I came back to California and worked
4 for Gene Medical Systems in a digital fluoroscopy system
5 primarily testing large print and circuit boards that process
6 digital video, as well as I wrote some software for them for
7 testing purposes.

8 Q. That was 1981?

9 A. That was '81 into '82.

10 Q. Okay.

11 A. And then I joined CableData in July of '82.

12 Q. And in what capacity did you join CableData?

13 A. I was hired as an electronic technician and worked as such
14 for about six months and was promoted to an engineer.

15 Q. And have you been with CableData ever since?

16 A. No. I left the company for a couple of years in 1986 to
17 go back to New Jersey with some friends in a small business
18 where we designed bit slice engines for high speed letter
19 graphics as well as bit slice software primarily in the
20 printing industry.

21 Q. What do you mean by bit slice?

22 A. Bit slice, to get very high performance, separates the
23 components of traditional microprocessor into separate pieces
24 and uses very wide instruction orders as for the normal 8, 16,
25 32 bit systems we see today.

1 Q. Did you return at some point in time, I take it, to
2 CableData?

3 A. Yes, I did, 1988.

4 Q. In what capacity?

5 A. As a hardware/software engineer.

6 Q. Did you remain in that capacity until the present time?

7 A. Yes, although my focus has clearly shifted to the software
8 over the last five years.

9 Q. Have you received any professional honors over the course
10 of your career?

11 A. Within the company I have received a number of different
12 certificates and awards, but 1992 I received Fellowship of the
13 Flame award, which is our company's highest award for lifelong
14 career achievement and recognition of expertise in my field.

15 Q. And what is the field in which your expertise was
16 recognized?

17 A. It would be computer technology both hardware and
18 software.

19 Q. Have you published in the field of computer technology
20 hardware and software?

21 A. I have published in several journals, Computer Language,
22 International Tandem Users Journal as well as I've written a
23 large number of tutorial and instructive articles in in-house
24 publications.

25 Q. Do you have any financial interest in the outcome of this

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OKLAHOMA

3 PREVUE INTERACTIVE, INC., a Delaware)
4 corporation,)

5 and)

6 UNITED VIDEO SATELLITE GROUP, INC.,)
7 a Delaware corporation,)

8 Plaintiffs,)

9 V.) No. 93-C-934-H

10 STARSIGHT TELECAST, Inc., a)
11 California corporation,)

12 Defendant.)

13 STARSIGHT TELECAST, Inc., a)
14 California corporation,)

15 Counterclaimant,)

16 V.)

17 UNITED VIDEO SATELLITE GROUP, INC.,)
18 a Delaware corporation,)

19 PREVUE INTERACTIVE, INC., a Delaware)
20 corporation,)

21 and)

22 PREVUE NETWORKS, INC., a Delaware)
23 corporation,)

24 Counterdefendants.)

25 REPORTER'S TRANSCRIPT OF PROCEEDINGS
 HAD ON MAY 13, 1996
 NONJURY TRIAL - VOLUME III

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

1 APPEARANCES:

2 For the Plaintiffs Mr. John E. Dowdell
 and Counterdefendants: Norman & Wohlgemuth
 3 2900 Mid-Continent Tower
 Tulsa, Oklahoma 74103

4 Mr. Robert C. Morgan
 5 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
 6 Ms. Elaine A. Drager
 Fish & Neave
 7 1251 Avenue of the Americas
 New York, New York 10020-1104

8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 Orbison & Lewis
 10 Frisco Building
 502 West Sixth Street
 11 Tulsa, Oklahoma 74119-1010

12 Mr. A. James Isbester
 Mr. William L. Anthony
 13 Ms. Susan M. Spaeth
 Mr. R. T. Sunny Cherian
 14 Townsend and Townsend and Crew
 Steuart Street Tower
 15 One Market Plaza
 San Francisco, California 94105-1492

16 Mr. William L. Anthony, Jr.
 17 Brobeck, Phleger & Harrison
 Two Embarcadero Place
 18 2200 Geng Road
 Palo Alto, California 94303-0913

19 Mr. John W. Girvin, Jr.
 20 Cooley, Godward, Castro,
 Huddleston & Tatum
 21 Five Palo Alto Square
 4th Floor
 22 Palo Alto, California 94306-2155

23 - - - - -

24

25

1 MR. MORGAN: Prevue calls Mr. John Kerklo.

2 THE COURT: All right Mr. Kerklo, please come forward
3 and be sworn.

4 JOHN KERKLO

5 Called as a witness on behalf of the plaintiffs, being first
6 duly sworn, testified as follows:

7 MR. ROGERS: Your Honor, may I approach the
8 equipment and try to lower the volume in case we have to use it
9 again?

10 THE COURT: All right, go ahead.

11 MR. MORGAN: I'm sorry, did the Court get a set of
12 exhibits? Let me hand these up to you. And may I approach the
13 witness, Your Honor?

14 THE COURT: Yes, go ahead.

15 MR. MORGAN: Let me hand you this one. This is Mr.
16 Marshall's.

17 THE COURT: Go ahead, please.

18 MR. MORGAN: Thank you, Your Honor

19 DIRECT EXAMINATION

20 BY MR. MORGAN:

21 Q. What is your name?

22 A. My name is John Kerklo.

23 Q. What is your employment?

24 A. I am a partner in Media Management Services, Incorporated.

25 Q. What is the business of Media Management Services,

1 Incorporated?

2 A. We are consultants to the media and telecommunications
3 industries, particularly the cable television industry.

4 Q. Have you been retained as an expert on behalf of Prevue in
5 this action?

6 A. I have.

7 Q. Is that at your normal consulting rate?

8 A. Yes.

9 Q. When did you graduate high school, Mr. Kerklo?

10 A. In 1962.

11 Q. Mr. Kerklo you might want to move a little bit closer to
12 the microphone so we can hear you more clearly. Did you have
13 any particular interests in high school?

14 A. Among my interest were computers.

15 Q. There weren't a whole lot of computers available were
16 there?

17 A. In actuality I had never seen one.

18 Q. So what did you do with your interest in computers?

19 A. One of my science projects for high school was something I
20 called a computer.

21 Q. What did you do?

22 A. I implemented a binary adder using pinball machinery
23 relays..

24 Q. That's what you had available to you as a high school
25 student?

1 A. Yes.

2 Q. Did you go to college?

3 A. I did.

4 Q. Where and when, please?

5 A. I went to Pennsylvania State University from 1962 to 1965
6 and Ohio University from 1965 to 1970.

7 Q. What was your focus at Penn State?

8 A. I entered as an electrical engineer and I continued that
9 curricula but during my studies I discovered the computations
10 center. And my focus became the computation center.

11 Q. That's where the computers were at Penn State?

12 A. Indeed.

13 Q. Did you work while you were at Penn State?

14 A. Starting in 1963 I worked part-time for researchers at
15 Penn State who were -- who needed computer programming
16 assistance. Among --

17 Q. I'm sorry, go ahead?

18 A. Among them was the Ionospheric Research Laboratory.

19 Q. Why did you switch to Ohio University in 1965?

20 A. My mentor at Penn State, Dr. George Gorsline accepted a
21 position at Ohio University as their director of their computer
22 center. And he took me along as senior systems programmer.

23 Q. And you were at what level college then?

24 A. Approximately a junior.

25 Q. Now as a senior systems programmer at Ohio State, what

1 were your responsibilities?

2 A. That was Ohio University.

3 Q. I'm sorry, Ohio University. The football guys would be
4 unhappy with me.

5 A. The first responsibility was to choose a mainframe
6 computer facility for the university. And then to choose and
7 adapt operating systems for that computer and later to develop
8 an operating system that was specific to the university's
9 needs.

10 Q. What happened to your studies when you took your job at
11 Ohio University?

12 A. I shifted from a full-time student and part-time
13 employment to full-time employment and part-time student.

14 Q. Now while you were at Ohio University, did you teach any
15 classes?

16 A. Yes, I did.

17 Q. How did that come about, you weren't a professor, I
18 assume?

19 A. No, I was staff.

20 Q. Okay. How did it come about that you taught some classes?

21 A. The university at that time was teaching some basic
22 computer skill classes and wanted to expand their program.
23 Being a state university they had difficulty in a sort of a
24 chicken-and-egg thing there. So they drafted the computer
25 center staff to help them get started with some of those, --

1 those courses.

2 Q. You were one of those people?

3 A. I was one of those.

4 Q. Do you ever finally get your degree or piece of paper out
5 of Ohio?

6 A. I did not.

7 Q. What did you do instead?

8 A. I founded a company called Comp-Acct, Incorporated.

9 Q. That's not the Compact Computer Company, is it?

10 A. No, this was C-O-M-P hyphen A-C-C-T, or Computer
11 Accountings.

12 Q. Now you left the university for that in 1970?

13 A. I did.

14 Q. What was the business of Comp-Acct?

15 A. Comp-Acct conceived, and developed, and took to market the
16 first computerized point-of-sale cash register system. We sold
17 them to places like McDonald's.

18 Q. What did that system do?

19 A. It was not only a cash register function but a complete
20 accounting system for a fast food restaurant. It would do all
21 of the computations for inventory and payroll. And it would
22 project payroll and produce similar reports for store
23 management.

24 Q. What happened to Comp-Acct?

25 A. It was sold to General Telephone and Electronics in 1974.

1 Q. What did you do then?

2 A. I continued with what became GTE Comp-Acct.

3 Q. What areas did you work on there?

4 A. There I continued with the cash register development but
5 also expanded my role as a development engineer and a manager
6 of development engineers to other areas for GTE among those
7 included investigation of Teletext in about the 1977 time
8 frame.

9 Q. And after '77 what did you do?

10 A. The investigation for Teletext introduced me to the cable
11 television industry in that context as a possible delivery
12 mechanism for Teletext. I was interested in it. GTE had a
13 manufacturer of cable television equipment as a division and I
14 worked with them a bit and then later accepted a position with
15 GTE Sylvania C-A-T-V, in El Paso, Texas.

16 Q. At the cable TV system there?

17 A. Yes, excuse me -- it's a vendor for equipment.

18 Q. I'm sorry. It sells equipment for cable systems?

19 A. Yes.

20 Q. Now were you the only member of the engineering staff at
21 GTE Sylvania with computer skills?

22 A. I joined them in 1980. When I got there there were
23 already a number of engineers that were using microprocessors
24 to develop converter products and addressable converter
25 products and remote controls. I was not the only one when I

1 got there.

2 Q. Now when you talk about converter products, what is a
3 converter?

4 A. To cable television people a converter is the special
5 tuner that it provides in some cable systems and some
6 subscribers to tune the channels that are carried on the
7 cable. In other destinations the converter might also include
8 a descrambling function which is used to decode secure
9 channels.

10 Q. That's part of a set-top box?

11 A. Set-top box is a fairly recent term for that same thing.

12 Q. When did you leave GTE?

13 A. I left GTE in 1982, joining American Television and
14 Communications in early 1983.

15 Q. What was ATC's business at that time?

16 A. In 1983, ATC was a large cable television multiple system
17 operator.

18 Q. What was your position, please?

19 A. Director of Research and Development.

20 Q. By about the 1985 time period, how many people were on
21 your staff?

22 A. I had 12 research professionals and a few technicians.

23 Q. What technical backgrounds did these people have?

24 A. They were all in the computer field, hardware,
25 development, software development or both.